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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/718,770
Filing Date: November 22, 2000
Appellant(s): DUNLAY ET AL.

David Harper
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/13/07 appealing from the Office action mailed 1/30/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Appellant states an Appeal Brief was filed on August 12, 2003 along with a Notice of Appeal for Application 09/624131; however, the examiner does not see these papers filed in the record of 09/624131.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,961,923	NOVA et al.	10-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13-18 and 23-25 are rejected under 35 U.S.C. 102(e)(2) as being anticipated by Nova et al. (P/N 5,961,923).

Nova et al. disclose a method that involves cell sorting assays, storage of matrices with memories on machine-readable media, and retrieving stored information (abstract) as recited in the preamble of instant claim 13. Nova et al. disclose the use of high throughput screening on microplate formats to screen a number of drug compounds and cell-based assays (col. 6, lines 7-19) which represents providing a microplate comprising cells and treating with a test compound, (as stated in instant claims 13, 15, and 16) wherein the matrices which are microplates containing 96, 384, or higher format wells with each well or selected wells including a memory device (col. 8, lines 30-36 and lines 63-67) as stated in step a) of instant claim 13. Nova et al. disclose computer systems and methods for recording, reading, or retrieving information in the data storage devices (col. 15 lines 60-67) which represent the computer system of instant claim 13. Nova et al. disclose maintaining a database that includes all patient information for the sample as well as other aspects of the patient's file (col. 83, lines 9-20) which represents the computer system database, as stated in instant claim 13. Nova et al. disclose using memory devices that include the input/output of stored information for higher density memories (col. 13, lines 49-56) and software allowing the user to specify what chemical blocks are to be used, the number of steps, and pharmacophore names (col. 87, lines 39-51) as well as using user-entered compound names stored in a database (col. 88, lines 17-20) which represent storing input parameters used for screening in a database, as stated in step b) of instant claim 13 as well as software having instructions causing a computer to execute a method, as stated in instant claim 14. Nova et al. disclose individual particles can be identified by reserving certain memory locations for identification only, individual identification (col. 73, lines 1-11), as well as software providing archival capability for a 96-well format where individual wells can be selected (col. 88, lines 48-

54) which represents selecting an individual well on the plate and storing information, as stated in step c)i) of instant claim 13 and microplate data, as stated in instant claim 17. Nova et al. disclose software reading one tag and encoded information including graphical displays, reports including progress (calculations) (col. 88, lines 16-34), searching for specific compounds with certain building blocks (feature data) including those already archived by displaying structure, archive location, microplate group name, number and well (col. 88, lines 55-62 and Figure 6), using fluorophors or other luminescent moieties, labeling molecules and biological particles, tagging molecules (abstract), tagging molecules such as antigens, antibodies, ligands, proteins, and nucleic acids and tagging by imprinting the matrix with identifying information (col. 4, lines 58-67 and col. 7, lines 6-15), cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported and metabolized by the cells, can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60), using optical memories that rely on changes in chemical or physical properties of molecules and storing information associated with each matrix including reaction detection (col. 7, lines 16-32 and lines 57-67), a photodetector and recording devices to detect fluorescent occurrence or other optical emission (col. 10, lines 6-23), and using bar codes associated with each well in a microtiter plate (col. 8, lines 60-67) which represents collecting, calculating, storing, and retrieving subcellular image data, cell feature data, well summary data, plate summary data in a database, as stated in steps i) through ix) of instant claim 13 as well as instant claim 17. Nova et al. disclose optical memory devices (OMD) and image acquisition from a camera that can be displayed to the system monitor including edges and peak signals as

well as determining the average intensity of each cell (col. 9, line 18; col. 51, line 61 to col. 52, line 9 and lines 27-60; and Figure 31) which represents collecting image data, intensity analysis, and feature data of cells, as stated in instant claims 13 and 23-25. Nova et al. disclose repeating the steps for handling, writing, reading, and distributing the optical memory devices to the next process step (col. 54, lines 5-11 and Figure 18) which represents the repeating steps in step c) of instant claim 13. Nova et al. disclose other repeating screening protocols (col. 118, lines 35-36 and 54-57 and col. 128, lines 39-49). Nova et al. disclose recording devices including a photodetector to detect the occurrence of fluorescence or other optical emission and permitting data storage (col. 10, lines 6-23) which represents a computer system database that includes photographic image data, as stated in instant claim 18.

Thus, Nova et al. anticipate the instant invention.

(10) Response to Argument

Appellant summarizes independent claim 13. Appellant argues that Nova et al. do not teach or disclose collecting subcellular image data from cells in the wells along with the collecting, storing, and two calculating steps in instant claim 13. This statement is found unpersuasive as Nova et al. disclose cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported and metabolized by the cells and can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60), using optical memories that rely on changes in chemical or physical properties of molecules and storing information associated with each matrix

including reaction detection (col. 7, lines 16-32 and lines 57-67), as well as using scintillant plates that include a memory in each well and a recording device with memory that may be placed in the wells of the plate (col. 99, second paragraph). In addition, Nova et al. disclose software reading one tag and encoded information including graphical displays, reports including progress (calculations) (col. 88, lines 16-34), searching for specific compounds with certain building blocks (feature data) including those already archived by displaying structure, archive location, microplate group name, number and well (col. 88, lines 55-62 and Figure 6), using fluorophors or other luminescent moieties, labeling molecules and biological particles, tagging molecules (abstract), tagging molecules such as antigens, antibodies, ligands, proteins, and nucleic acids and tagging by imprinting the matrix with identifying information (col. 4, lines 58-67 and col. 7, lines 6-15), cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported and metabolized by the cells and can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60), matrices with memories with molecules introduced into scintillant plates in which cells have been cultured wherein light is transmitted and assessing the effects of chemicals on selected biochemical events, such as protein or DNA synthesis, cell receptor-ligand binding, and various examples of transport and uptake wherein identities of the contents of the wells are encoded into memory (col. 99, second to fifth paragraphs), using optical memories that rely on changes in chemical or physical properties of molecules and storing information associated with each matrix including reaction detection (col. 7, lines 16-32 and lines 57-67), a photodetector and recording devices to detect fluorescent occurrence or other optical emission

(col. 10, lines 6-23), and using bar codes associated with each well in a microtiter plate (col. 8, lines 60-67) which represents collecting, calculating, storing, and retrieving subcellular image data, cell feature data, well summary data, plate summary data in a database, as stated in steps i) through ix) of instant claim 13.

Appellant states that the Patent Office asserts that "sub-cellular image data" is defined as anything involving sub-cellular and image data and argues that the Patent Office has provided no basis for this definition. Appellant argues that Nova et al. do not disclose these limitations of instant claim 13. The instant specification does not recite a clear and concise definition of "sub-cellular image data" such that the term has been interpreted broadly and reasonably. This broad and reasonable interpretation is commensurate with the teachings of the instant specification that recites cytoplasmic region and nuclear region as two-subcellular compartments and measuring translocation (page 12, last paragraph), transcription factor (page 15, first paragraph), labeling nuclei with DNA specific fluorophore (page 15, second paragraph), and determining antibody fluorescence (page 15, line 18), and proteins (page 19, first paragraph) which all represent sub-cellular materials. When Nova et al. disclose using fluorophors or other luminescent moieties, labeling molecules and biological particles, tagging molecules (abstract), tagging molecules such as antigens, antibodies, ligands, proteins, and nucleic acids and tagging by imprinting the matrix with identifying information (col. 4, lines 58-67 and col. 7, lines 6-15) and cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported and metabolized by the cells, can be examined using

real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60), the fluorophors and luminescent moieties provide image data when they are monitored and examined in the analysis.

Appellant argues that the abstract and column 7, lines 6-32 of Nova et al. were cited as key components in teaching generating sub-cellular image data. This statement is found unpersuasive as instant claim 13 recites "collecting" not generating subcellular image data from the cells in wells. This "collecting" limitation has already been discussed in depth above, as far as where Nova et al. disclose this limitation, particularly tagging molecules such as antigens, antibodies, ligands, proteins, and nucleic acids and tagging by imprinting the matrix with identifying information (col. 4, lines 58-67 and col. 7, lines 6-15) and cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported and metabolized by the cells, can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60). Appellant refer to the matrices with memories in the abstract of Nova et al. wherein the matrix materials are used as supports in solid phase assays and argue that solid phase supports are not located within cells. This argument is deemed unpersuasive as the entire patent is used for this prior art rejection, and Nova et al. disclose cell based assays (already discussed above) including matrices with memories with molecules introduced into scintillant plates in which cells have been cultured wherein light is transmitted and assessing the effects of chemicals on selected biochemical events, such as protein or DNA synthesis, cell receptor-ligand binding, and various examples of transport and uptake wherein identities of the contents of the wells are encoded into memory (col. 99, second to fifth paragraphs) which represent memories with matrices of sub-cellular

information located in cells that are placed in the wells. Appellant argues that column 7, lines 6-32, of Nova et al. recite tagging molecules that are associated with, such as in proximity to or in physical contact with the matrix combination and argues that in order to be labeled, the molecules or biological particles must be associated with, such as in proximity to or physically contacted with the matrix combination. This statement is found unpersuasive as Appellant is again directed to additional embodiments of the Nova et al. patent, for example, the cell-based assay section (starting on col. 95 of Nova et al.) wherein matrices with memories with molecules introduced into scintillant plates in which cells have been cultured wherein light is transmitted and assessing the effects of chemicals on selected biochemical events, such as protein or DNA synthesis, cell receptor-ligand binding, and various examples of transport and uptake wherein identities of the contents of the wells are encoded into memory (col. 99, second to fifth paragraphs) which represent memories with matrices of sub-cellular information located in cells that are placed in the well.

Appellant argues that antigens, antibodies, ligands, and nucleic acids are not necessarily contained within a cell and can be isolated away from cells, such as for use in solid phase chemical and biochemical synthesis, immunoassays, and hybridization reactions as used by Nova et al. While antigens, antibodies, ligands, and nucleic acids can be isolated, it is noted that Nova et al. clearly teach cell-based assays with microplates wherein events within the cells are assessed and identities of the contents of the wells are encoded into memory (i.e. col. 99, second to fifth paragraphs) and cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported

and metabolized by the cells, can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60).

Appellant argues that Nova et al. disclose OMD and image acquisition from a camera (i.e. col. 9, 51-52) but do not refer to subcellular images of cells. This statement is found unpersuasive as the instant claims do not recite "subcellular images of cells", but rather "subcellular image data from the cells". Nova et al. disclose subcellular image data from cells in various other passages, as already discussed above. For example, Nova et al. clearly teach cell-based assays with microplates wherein events within the cells are assessed and identities of the contents of the wells are encoded into memory (i.e. col. 99, second to fifth paragraphs) and cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that interact with the cell surface or that can be taken up, transported and metabolized by the cells, can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60). Appellant argues that the average intensity of each cell has nothing to do with subcellular image data. It is reiterated that when Nova et al. disclose cell-based assays with microplates wherein events within the cells are assessed and identities of the contents of the wells are encoded into memory (i.e. col. 99, second to fifth paragraphs), using fluorophors or other luminescent moieties, labeling molecules and biological particles, tagging molecules (abstract), tagging molecules such as antigens, antibodies, ligands, proteins, and nucleic acids and tagging by imprinting the matrix with identifying information (col. 4, lines 58-67 and col. 7, lines 6-15) and cell-based assays using an array of wells to study and monitor differences in biological processes in wells allowing virtually all types of biological molecules to be studied including those that

interact with the cell surface or that can be taken up, transported and metabolized by the cells and can be examined using real time analysis (col. 95, line 25; col. 97, line 35 to col. 98, line 60), the fluorophors and luminescent moieties provide subcellular image data when they are monitored and examined in the analysis.

Appellant provides a table citing sections of the Nova et al. reference and argues they do not disclose collecting sub-cellular image data from cells. The passages in Nova et al. that discuss this limitation have been already been described in detail above. Appellant summarizes and reiterates arguments that have already been found unpersuasive for the reasons given above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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November 1, 2007

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